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Flood Warning Verification***

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| _____<br>(Signed by)<br>Dennis H. McCarthy<br>Director, Central Region | _____<br>May 16, 2003<br>Date |
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## Flood Warning Verification

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1. Purpose. The purpose of this supplement is to specify verification requirements for River Flood Warnings and Statements (AWIPS product categories FLW and FLS) with forecast points predicted to reach or exceed minor flood stage.

2. Background. Central Region field offices and regional headquarters will use output from a regionally supported application to meet objectives stated in NWS Policy Directive 10-16. These objectives are to measure service quality and product accuracy, assess customer satisfaction, collect data on significant events, communicate performance information to senior government officials, determine required service improvements, and assess field office operational effectiveness.

The Central Region (CR) River Flood Verification Program is performed at the Weather Forecast Office (WFO), but is actually a verification of the hydrologic program as a whole. This includes but is not limited to, the quality of cooperative data, remote sensing data, river forecast models, River Forecast Center (RFC) hydrologist input, and WFO input. Flood Warning verification statistics will be used to identify areas where deficiencies may exist, such as in areal and temporal resolution of data. The Service Hydrologist or Hydrologic focal point may use verification results to improve his/her program. Likewise, RFC hydrologists may use the verification results to identify deficiencies and improve forecast operations. Specific RFC river forecast verification is performed separately and described in NWS Instruction 10-1601 section 4.2.

3. River Verification Process. All CR WFOs will perform verification for river flooding on initial warnings (FLW) or statements (FLS) with forecast to or above flood stage, as well as significant updates (e.g., upward change in category of flooding, locally defined significant criteria). Hydrologic Outlooks (ESF) and Hydrologic Statements (RVS) are not verified. However, observed data for flood crests where an FLS or FLW was *not* issued, should be verified following instructions in the river verification program documentation. Refer to the Appendix for further details regarding this application.

The verification program will be run for each month whether or not flooding occurred, according to program documentation instructions. The verification data file is due to Central Region Headquarters one month after the end of each month (e.g., verification for the month of January would be due March 1). WFOs are encouraged to share the output of this data with their supporting RFC(s) and others as appropriate. The WFOs' verification data in the CRH database will be used to create a regional summary. Regional summary reports will include statistics (POD, FAR, CSI) for the verification termed "basic" in the program output which is similar to the flash flood statistics that are generated nationally. Regional reports will also include information on lead time to flood stage and crest. At a minimum, regional reports will be generated on a quarterly basis and made available to all Central Region field offices.

## Appendix A - Obtaining and Operating the River Flood Verification Program

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1. Obtaining program files. The River Flood Verification Program is a Quattro Pro, Version 9, spreadsheet program named, `rvr_vfcn.qpw`. It can be downloaded from the CR metdat intranet server (`crh-1`), RVRVFCN subdirectory (i.e., `n:\RVRVFCN\rvr_vfcn.qpw`) on the regional lan. Documentation is stored in the same subdirectory in a Word Perfect file named, `rvr_vfcn_doc`. Follow instructions in this documentation for entering Flood Warning information. A Corel Presentations slide show, `wfo_vfcn`, which describes the river flood verification program and statistical output, is also available on the CR server in the RVRVFCN subdirectory.

2. Entering Data. Data should be entered onto the spreadsheet as described in `rvr_vfcn_doc`. One record is designed for one forecast point, thus an initial warning or statement for several locations on a river would require several entries to the log sheet. For the purpose of this verification program, a forecast point pertains to any point for which the WFO issues a forecast in a flood statement or warning. Data point stages that might be added to the statement or warning to provide further information, are not verified.

3. Sending reports to CRH. After completing the spreadsheet and running the program according to documentation instructions, save the spreadsheet as `hsa_rvr_mmyy` using the following convention: `hsa` is the WFO's 3-letter identification and `mmyy` is a four digit number for month and year (e.g., `dv_n_rvr_0101` would be Davenport's January 2001 verification file). This file will be sent to CRH one month after the close of the verification month, to the metdat server, RVRVFCN/reports subdirectory (refer to instructions in the program documentation).